WHAT IS CLAIMED:

1. An optoelectronic device comprising:

an array of photodetectors;

an array of input pads for a transimpedance amplifier array, each input pad coupled to a corresponding photodetector; and

a ground pad disposed between at least one adjacent set of said input pads.

2. The optoelectronic device of claim 1, wherein each of said input pads is coupled to said corresponding photodetector by a conductive wire, said wire bonded to each of said photodetectors and said corresponding input pads.

3. The optoelectronic device of claim 1, wherein each of said corresponding photodetectors is included in a corresponding array of photodetectors, and one of said ground pads is disposed between each adjacent set of said input pads.

4. The optoelectronic device of claim 3, wherein each of said array of input pads and said transimpedance amplifier array is formed on a first substrate, said array of photodetectors is formed on a second substrate, and each said input pad is coupled to said corresponding photodetector by means of a conductive wire bonded to each of said input pad, and a bond pad of said corresponding photodetector.

5. The optoelectronic device of claim 4, further comprising:

a ground structure formed on said second substrate, said ground structure connected to ground and to each of said ground pads.

6. The optoelectronic device of claim 3, wherein said array of input pads includes a linear array and said corresponding array of photodetectors includes a linear array, each photodetector including a bond pad, and wherein each of said input pads is coupled to said bond pad of said corresponding photodetector, by means of a substantially linear conductive lead.

7. The optoelectronic device of claim 6, wherein each of said linear array of input pads and said corresponding linear array of photodetectors, includes substantially the same pitch.

8. The optoelectronic device of claim 6, further comprising:

a ground strip connected to ground, said array of photodetectors situated between said ground strip and said array of input pads, wherein each ground pad includes a conductive ground lead extending therefrom and coupled to said ground strip, said conductive ground leads interposed between adjacent ones of said substantially linear conductive leads.

9. The optoelectronic device of claim 1, further comprising:

a ground structure connected to ground and to each of said ground pads.

10. The optoelectronic device of claim 9, wherein each of said ground pads is connected to said ground structure by a wire bonded to each of said ground pad and said ground strip.

11. The optoelectronic device of claim 3, wherein said array of input pads and said transimpedance amplifier array are formed on a first substrate and said array of photodetectors is formed on a second substrate, each of said first substrate and said second substrate included within a multi-layer ceramic substrate.

12. The optoelectronic device of claim1, wherein said optoelectronic product is a ROSA (receiver optical subassembly) and each input pad and corresponding photodetector form part of a data channel.

13. A ROSA (receiver optical subassembly) comprising:

a plurality of photodetectors;

a plurality of data channels, each data channel including a conductive lead coupling an input pad of a transimpedance amplifier to a corresponding photodetector; and

a ground pad disposed between each adjacent set of said input pads.

14. The ROSA of claim 13, wherein said input pads and said ground pads are each formed on a first substrate and said corresponding photodetectors are formed on a second substrate disposed within said ROSA, and each input pad is wire bonded to a bond pad of said corresponding photodetector.

15. The ROSA of claim 14, wherein said ground pads are each coupled to a ground structure formed on said second substrate, and said corresponding photodetectors are situated between said input pads and said ground structure.

16. An optoelectronic device comprising:

a plurality of data channels in a multi-layer ceramic substrate of a ROSA (receiver optical sub-assembly), each data channel extending along an exposed surface of a ceramic layer of said multi-layer ceramic substrate and coupled to a transimpedance amplifier included within said multi-layer ceramic substrate, said plurality of data channels including data channels extending along different ceramic layers of said multi-layer ceramic substrate.

17. The optoelectronic device of claim 16, wherein at least one of said data channels is vertically spaced from other of said data channels.

18. The optoelectronic device of claim 16, wherein each data channel includes a differential signal pair, each differential signal including a conductive trace formed on said exposed surface and coupled to a corresponding output pad of said transimpedance amplifier.

19. The optoelectronic device of claim 18, wherein each differential signal includes said conductive trace wire-bonded to said corresponding output pad of said transimpedance amplifier.

20. The optoelectronic device of claim 16, wherein adjacent data channels of said plurality of data channels extend along different layers of said multilayer ceramic substrate.

21. The optoelectronic device of claim 20, wherein alternate data channels extend along an upper ceramic layer of said multi-layer ceramic substrate, and other data channels extend along a lower ceramic layer of said multi-layer ceramic substrate.

22. The optoelectronic device of claim 21, wherein said upper ceramic layer is formed directly on a portion of said lower ceramic layer, said upper ceramic layer thereby forming a step over said lower ceramic layer.

23. The optoelectronic device of claim 16, wherein a plurality of said ceramic layers of said multi-layer ceramic carrier, are stacked such that each of said plurality of said ceramic layers includes an exposed surface.

24. The optoelectronic device of claim 16, wherein each data channel includes a conductive trace that extends along said exposed surface of said ceramic layer of said multi-layer ceramic substrate and is coupled to an output pad of said transimpedance amplifier, said output pads formed in a linear array having a first pitch and said conductive traces extending from said output pads to include a second pitch being greater than said first pitch.

25. The optoelectronic device of claim 18, wherein said output pads are formed in a linear array and include a first pitch, and said conductive traces extend from said output pads to include a second pitch being greater than said first pitch.

26. The optoelectronic device of claim 25, wherein each of said conductive traces are further coupled to a post-amplifier through a conductive via formed through said multi-layer ceramic substrate.

27. The optoelectronic device of claim 16, wherein said multi-layer ceramic substrate includes at least three ceramic layers along which said data channels extend.

28. The optoelectronic device of claim 16, wherein said data channels extend along a first ceramic layer and a second ceramic layer, and further comprising a ground plane formed between further ceramic layers of said multi-layer ceramic substrate.

29. The optoelectronic device of claim 28, wherein a first data channel includes a first conductive trace that extends along said first ceramic layer and a second data channel includes a second conductive trace that extends along said second ceramic layer, said first conductive trace including a first width and said second conductive trace including a second width, said first width differing from said second width such that said first conductive trace and said second conductive trace include substantially the same differential impedance and bandwidth.

30. The optoelectronic device of claim 19, wherein adjacent data channels of said plurality of data channels extend along different ceramic layers of said multi-layer ceramic substrate.

31. The optoelectronic device of claim 16, wherein said data channels are spaced apart by a first distance at a first location at which said data channels are coupled to said transimpedance amplifier and spaced apart by a second distance at a second location, said second distance being greater than said first distance.

32. An optoelectronic device comprising:

a ROSA (receiver optical subassembly) including a plurality of data channels, each data channel including a differential pair of conductive signal lines coupling a transimpedance amplifier included within said ROSA, to a post-amplifier integrated circuit, said conductive signal lines each including a conductive trace that extends from said transimpedance amplifier along a multi-layer ceramic substrate, adjacent conductive trace extending along exposed surfaces of different layers of said multi-layer ceramic substrate.

33. An optoelectronic device comprising:

a ROSA (receiver optical subassembly) including a transimpedance amplifier array including a corresponding array of differential signal pairs coupled thereto, each said differential pair forming a data channel for being coupled to a post-amplifier, adjacent data channels extending along different layers of a multi-layer ceramic substrate.